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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,296	12/28/2000	George Eric Coxon	LD 11444 GEC 2 0498	8620

7590 03/09/2004  
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EXAMINER
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SANTIAGO, MARICELI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/751,296

Applicant(s)

COXON ET AL.

Examiner

Mariceli Santiago

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-9, 11, 12 and 14-20 is/are rejected.  
7) ☒ Claim(s) 10 and 13 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

The Amendment, filed on November 25, 2003, has been entered and acknowledged by the Examiner.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 12, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sernetz (US 4,968,459).

Regarding claims 1-3, 12, 19 and 20, Sernetz discloses a method of manufacturing an arc tube (Column 4, lines 37-38) comprising the steps of sintering an arc tube composition to form an arc tube, and annealing the arc tube (abstract), wherein said arc tube composition has an alumina content of about 99.99% (Column 2, lines 58-60), and wherein said alumina has a particle size up to about 10  $\mu\text{m}$  (Column 3, lines 62-65), the annealing step occurs at a temperature from about above 600°C (Column 6, lines 17-18).

Regarding claim 4, Sernetz discloses a method of manufacturing an arc tube wherein the step of sintering an arc tube composition to form an arc tube includes forming a ceramic arc tube (Column 4, lines 37-38).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-9, 11 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sernetz (US 4,968,459) in view of Rutan et al. (US 5,942,850).

Regarding claims 5-9, 11 and 14-18, Sernetz discloses the claimed invention except for the process steps of filling the arc tube with mercury and a halide, the mercury having a weight between about 5.5 and 6.5 mg, the halide having a weight between 10 and 15 mg, and the arc tube having a gap length between about 7.5 and 8 mm. However, Rutan discloses an alumina arc tube comprising a filling of mercury having a weight between about 5.5 and 6.5 milligrams (Column 4, lines 46-47), and a filling of halide having a weight between about 10 and 15 milligrams (Column 4, lines 27-32), and the arc tube having a gap length between about 7.5 and 8 mm (Column 2, lines 29-31). It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an arc tube filling comprising mercury and halide, the mercury having a weight between about 5.5 and 6.5 mg, the halide having a weight between 10 and 15 mg, and the arc tube having a gap length between about 7.5 and 8 mm, since optimization of workable ranges is considered within the skill of the art.

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Claims 12 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows et al. (US 5,955,845) in view of Harnett et al. (US 4,761,390).

Regarding claim 12, Fellows discloses a method of manufacturing a metal halide lamp comprising a sealed arc tube made of densely sintered yttrium oxide ceramic (Column 3, lines 17-25). Fellows is silent in regards to the process of making the sintered arc tube as claimed. However, in the same field of endeavor, Harnett discloses a process for making optically transparent yttrium oxide articles, comprising the steps of sintering an yttrium oxide composition having a particle size up to about 1.0  $\mu\text{m}$  to form an optically transparent article and annealing the article at a temperature from about 1000° to about 1500° C (see Table and Column 3, lines 31-39). With the particular process the transparent yttrium oxide article is provided with a high thermal shock resistance, a high optical transparency and a relative low coefficient of absorption, which are well known properties desirable in arc tube discharge lamps. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the process steps disclosed by Harnett for the manufacture of the densely sintered arc tube of Fellows in order to provide an optically transparent arc tube composition having high thermal shock resistance, high optical transparency and a relative low coefficient of absorption.

Regarding claim 14, Fellows discloses a metal halide lamp comprising the step of filling the arc tube (Column 3, lines 6-10).

Regarding claims 15 and 16, Fellows discloses a metal halide lamp comprising the step of filling the arc tube with mercury (Column 3, lines 6-10) and having a weight of about 6.5 mg, i.e., 6.7 mg (Column 4, lines 36-38).

Regarding claim 17, Fellows discloses a metal halide lamp comprising the step of filling the arc tube with a halide (Column 3, lines 6-10).

***Allowable Subject Matter***

Claims 10 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 10 and 13, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 10 and 13, and specifically comprising the limitation of the annealing step including maintaining a pressure of about  $10^{-6}$  torr.

***Response to Arguments***

Applicant's arguments with respect to claims 1-9, 11, 12 and 14-20 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*WHS 3/8/04*  
Mariceli Santiago  
Patent Examiner  
Art Unit 2879

  
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